**Before the**
**Federal Communications Commission**
**Washington, D.C. 20554**

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| In the Matter of | ) | |
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| Carrier Current Systems, including Broadband over Power Line Systems | ) | ET Docket No. 03-104 |
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| Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems | ) | ET Docket No. 04-37 |
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**Comments of Thomas P. O'Brien, P.E.**
Electrical Engineer

## 1. No specified means of identification of BPL systems makes it impossible to pinpoint the source of harmful interference.

Power companies, even without BPL emitters in place, sometimes have great difficulty recognizing and identifying equipment defects that cause harmful interference, precisely because the equipment's emissions do not contain a recognizable signature. Because BPL systems will radiate, some means needs to be provided for identification of these systems. This is not inconsistent with the Commission's rules in Part 2 and Part 97, quoted below, with emphasis added.

§2.303 Other forms of identification of stations.

(a) The following table indicates forms of identification which may be used in lieu of call signs by the specified classes of stations. Such recognized means of identification may be one or more of the following: name of station, location of station, operating agency, official registration mark, flight identification number, selective call number or signal, selective call identification number or signal, characteristic signal, characteristic of emission or other clearly distinguishing form of identification readily recognized internationally. Reference should be made to the appropriate part of the rules for complete information on identification procedures for each service.

§97.119 Station identification.

(a) Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every ten minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified communications or signals, or transmit as the station call sign, any call sign not authorized to the station.
(b) The call sign must be transmitted with an emission authorized for the transmitting channel in one of the following ways:

(1) By a CW emission. When keyed by an automatic device used only for identification, the speed must not exceed 20 words per minute;
(2) By a phone emission in the English language. Use of a standard phonetic alphabet as an aid for correct station identification is encouraged;
(3) By a RTTY emission using a specified digital code when all or part of the communications are transmitted by a RTTY or data emission;
(4) By an image emission conforming to the applicable transmission standards, either color or monochrome, of §73.682(a) of the FCC Rules when all or part of the communications are transmitted in the same image emission.

(c) One or more indicators may be included with the call sign. Each indicator must be separated from the call sign by the slant mark (/) or by any suitable word that denotes the slant mark. If an indicator is self-assigned, it must be included before, after, or both before and after, the call sign. No self-assigned indicator may conflict with any other indicator specified by the FCC Rules or with any prefix assigned to another country.

(d) When transmitting in conjunction with an event of special significance, a station may substitute for its assigned call sign a special event call sign as shown for that station for that period of time on the common data base coordinated, maintained and disseminated by the special event call sign data base coordinators. Additionally, the station must transmit its assigned call sign at least once per hour during such transmissions.

(e) When the operator license class held by the control operator exceeds that of the station licensee, an indicator consisting of the call sign assigned to the control operator's station must be included after the call sign.

(f) When the control operator who is exercising the rights and privileges authorized by §97.9(b) of this Part, an indicator must be included after the call sign as follows:
(1) For a control operator who has requested a license modification from Novice to Technician Class: KT;
(2) For a control operator who has requested a license modification from Novice, Technician or Technician Plus Class to General Class: AG;
(3) For a control operator who has requested a license modification from Novice, Technician, Technician Plus, General, or Advanced Class operator to Amateur Extra Class: AE.

(g) When the station is transmitting under the authority of §97.107 of this part, an indicator consisting of the appropriate letter-numeral designating the station location must be included before the call sign that was issued to the station by the country granting the license.

**The commission <u>must</u> require BPL providers to inject self-identification signals into their networks, said signals necessarily having bandwidth and power levels similar to those of the network's BPL signals.**

**2. Without a specified minimum response time imposed on BPL operators, harmful interference can continue for weeks (or months) without remedy. For some users of MF and HF spectrum, this is intolerable.**

Most of the licensed HF spectrum is channelized or fixed-frequency. The wideband nature of the radiated emissions from BPL equipment makes for unavoidable harmful interference to fixed-frequency or channelized licensed users. Amateur radio, on the other hand (with the exception of the new 60-meter band), is frequency-agile: amateurs can change frequency to avoid fixed-frequency, narrow-band interference. Even the most frequency-agile system, however, cannot avoid harmful interference from wideband noise.

Amateur radio emergency operations, as frequency-agile as they are, cannot wait an unspecified time for relief from wideband noise. For that matter, neither can any other licensed MF or HF user.

**The Commission must require a BPL provider to respond within 30 minutes of a reported harmful interference situation, by shutting down the offending device or system - as already provided in Part 15 rules.**

**3. It should be of some concern to the Commission that, even though they all are claimed to meet FCC Part 15 emission requirements, some of the test BPL installations radiate harmful interference, while others do not.**

One could conclude that (1) the claim of Part 15 compliance is incorrect, or (2) that the test installations are in fact Part 15 compliant, but still radiate harmful interference, leading one to infer that Part 15 compliance is inadequate to protect licensed services from harmful interference. This inference is borne out by the NTIA's modeling and field measurements.

**4. The business case for BPL providing service to rural areas is not clear, and may in fact be bogus. Harming urban and suburban HF users to push a "universal service" agenda is neither just nor economic.**

An industry association, UPLC, said in recent comments:

"Although many of the technology hurdles have been overcome, the principal obstacle that remains is the range of BPL. Typically the BPL signal travels substantially less than a mile from the point where the signal is injected. This is particularly frustrating because BPL systems are not otherwise limited to a particular area, unlike other broadband architectures that are predicated upon massive head-ends or central offices. Technically, BPL can be deployed in rural as well as suburban communities, but economically present FCC rules constrain such deployment. Repeating the signal will increase the range, but it increases the costs and the latency of the service and constrains the bandwidth due to frequency use limitations."

- from UPLC's comments on FCC 03-104

**The Commission should examine carefully the engineering work done by NTIA, and balance it against the smoke and mirrors provided by BPL (lobbyist) proponents. Once a large installed base of BPL is in place, it will be embarrassing for the Commission to order it dismantled on grounds of harmful interference.**

**5. I respectfully request that the Commission consider the points I have raised above, and do its part to prevent this pollution of the HF spectrum, a worldwide natural resource. The nation trusts the Commission to make the best technical as well as economic and political judgements. So do I.**

Respectfully submitted,

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